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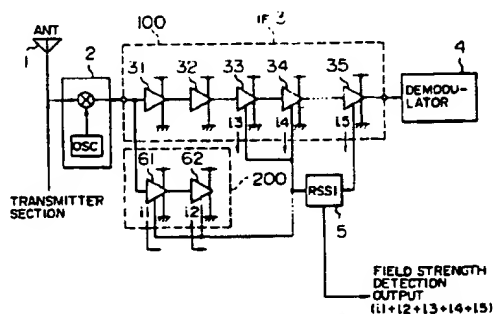
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(54) Radio communication apparatus with circuit for field strength determination

(57) Part of a first signal path (100) for amplifying a signal includes circuits (33b, 34b) for detecting a signal, and a second signal path (200) connected to an input portion of the first signal path includes circuits (61b, 62b) for detecting the signal. A signal strength detector circuit (5) adds outputs from the respective detector circuits in the first and second signal paths. The first signal path has a function of expanding the dynamic range in a

smaller signal region as compared with the second signal path, while the second signal path has a function of expanding the dynamic range in a larger signal region as compared with the first signal path. When a radio transmitted output is variably controlled in a radio transmitter section (TX) based on a field strength detection output for a received signal, the transmitted output is optimized, resulting in minimizing consumed power and unnecessary radiation of radio waves.

FIG. 3



EP 0 639 901 A3

EP 0 639 901 A3



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IntCl.6)
X	EP 0 343 569 A (NOKIA MOBIRA OY) 29 November 1989	1,2,8, 12,13	H04B17/00 H04B7/005 H03G7/00
Y	* the whole document *	1,2,4,6, 7,9,14, 15	
A		3,5,11, 16	
X	US 5 129 098 A (MCGIRR ANDREW E ET AL) 7 July 1992	14,19	
Y	* abstract; claim 1 *	1,2,6, 14,15,18	
A	* column 5, line 20 - line 44 *	17	
X	EP 0 530 165 A (ERICSSON TELEFON AB L M) 3 March 1993	14,19	
	* column 6, line 9 - line 41 *		
	* column 7, line 12 - line 17 *		
	* column 7, line 30 - line 49; figures 1,2 *		
Y	EP 0 517 305 A (PHILIPS NV) 9 December 1992	1,2,4	TECHNICAL FIELDS SEARCHED (IntCl.6) H04B H03G
	* column 1, line 3 - line 16 *		
	* column 6, line 5 - line 12; figure 2 *		
Y	GB 2 116 794 A (NIPPON ELECTRIC CO) 28 September 1983	1,2,7,9	
	* abstract *		
	* page 1, line 80 - line 112 *		
Y	US 4 393 513 A (YOKOGAWA TOMOSHISA ET AL) 12 July 1983	14,18	
	* abstract *		

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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 9 September 1998	Examiner Harris, E
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document</p>			

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EP 0 639 901 A3



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	<p>EP 0 248 428 A (NIPPON ELECTRIC CO) 9 December 1987</p> <p>* abstract *</p> <p>* page 2, line 4-12 *</p> <p>* page 8, line 52 - line 57 *</p> <p>* page 9, line 31 - line 33 *</p> <p>* page 10, line 34 - line 35; figure 9 *</p> <p>-----</p>	3,10,16,17	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search:		Date of completion of the search	Examiner
THE HAGUE		9 September 1998	Harris, E
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EP 0 639 901 A3 (PC/CO)